37952
S/035/62/000/005/063/098
A055/A101

3.2440

AUTHORS: Kashcheyev, B. L., Lebedinets, V. N., Suvorov, Yu. I.

TITLE: Number of meteors, according to observations made in Khar'kov in 1957 - 1960

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 5, 1962, 65, abstract 5A496 (V sb. "Meteory", no. 1, Khar'kov, Khar'kovsk. un-t, 1960, 11-19)

TEXT: The authors reproduce the results of the measurement of the number of meteors by the radiomethod at the 36.9 Mc frequency. The measurements were effected during 300 days between December 1957 and June 1960. Approximately 1,130,000 meteors were recorded; 10 - 15% of this number belonged to the active meteoric showers (Arietids, Geminids, η-Aquarids and others), 85 - 90% to sporadic meteors and low-activity showers. It is shown that diurnal variation of the number of meteors recurs with a fairly good accuracy in the same months in different years; the maximum number is almost always observed at about 6 o'clock in the morning (local time), i.e. near the apex culmination moment. According to the character of the variations in the number of meteors during the

Card 1/2

S/035/62/000/005/063/098
A055/A101

Number of meteors, according ...

24 hours of the day, the twelve-months' cycle of measurements can be divided into 3 periods: January - April, May - July, August - December. Possible explanations of such a distribution are given.

B. K.

[Abstracter's note: Complete translation]

Card 2/2

87353

S/035/60/000/012/011/019
A001/A001

64320

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1960, No. 12, p. 48, # 12264

AUTHOR: Kashcheyev, B. L.

TITLE: Radar Observations of Meteors by the Program of International Geophysical Year

PERIODICAL: V sb.: Issled. ionosfery i meteorov, No. 2, Moscow, AN SSSR, 1960, pp. 40-53

TEXT: Observations of meteors were carried out at the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute) from December 1957 with equipment having the following characteristics: operational frequency, 73 Mc; pulses frequency, 50 c; power of a pulse, 80 - 100 kw; duration of a pulse, 10 μsec; receiver sensitivity (at signal-to-noise ratio = 2), 5×10^{-14}w; transmission and reception were performed on a 7-element antenna of the wave channel type whose middle section was raised by 1.5 λ from the ground. The results are presented of recording meteoric activity, measurements of meteor velocities and

Card 1/2

KASHCHEYEV, B.L.; LEBEDINETS, V.N.; LAGUTIN, M.F.

Orbit of Geminids in 1959. Metеory; sbor.st. no.1:25-37 '60.
(MIRA 15:8)
(Meteors—December)

KASHCHEYEV, B.L.; LEBEDINETS, V.N.; LUK'YASHKO, D.N.

Radar observations of meteor activity under the program of the International Geophysical Year in 1958. Mezhdunar. geofiz. god [Kiev] no.2:32-36 '60. (MIRA 14:1)

1. Kharkov Polytechnical Institute.
(Meteors) (Radar in astronomy)

ACCESSION NR: AT3012752 S/2831/60/000/002/0040/0053

AUTHOR: Kashcheyev, B. L.

TITLE: Radar observations of meteors as part of the IGY program

SOURCE: AN SSSR. Mezhduvedomst. komit. po prov. Mezhdunarodn. geofizich. goda. 5 razdel program. MGG: Ionosfera. Sb. statey, no. 2, 1960, 40-53

TOPIC TAGS: meteor, meteor radar observation, meteor trail radar location, meteor velocity, meteor trail diffusion, international geophysical year

ABSTRACT: Preliminary results obtained in the Soviet Union during the first 12 months of the International Geophysical Year are reported. The meteoric activity in most stations was in accordance with the procedure proposed by K. V. Kosty'lev (Astron. Zhurn. No. 4, 643 1958). The apparatus and the measurement procedure are de-

Card 1/2

ACCESSION NR: AT3012752

scribed. Meteoric activity was investigated by radar methods by determining the following quantities: number of reflections from meteoric trails per unit time, time of passage of the meteor, distance from the meteor trail to the recording apparatus, and lifetime of the reflections. The geocentric meteor velocity was also determined. The pressure, temperature, and height of the homogeneous atmosphere are deduced from the diffusion of the meteor trails in the upper layers of the atmosphere. Data on the diffusion coefficient and on the drift velocity of the meteor trails and on atmospheric pressure at altitudes 80--100 km are therefore reported. All the result are compared with data obtained abroad. Orig. art. has: 17 figures and 5 formulas.

ASSOCIATION: NONE

SUBMITTED: 00 DATE ACQ: 22Oct63 ENCL: 00

SUB CODE: AS, AI NO REF SOV: 007 OTHER: 001

Card 2/2

KASHCHEYEV, B.L.; TARAN, V.I.

Measuring the velocity and direction of wind at altitudes of 100 - 125 kilometers. Dop.AN URSR no.10:1400-1402 '60. (MIRA 13:11)

1. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina. Predstavleno akademikom AN USSR V.G.Bondarchukom [Bondarchuk, V.H.].
(Winds)

3.1420

78017
SOV/33-37-1-17/31

AUTHORS: Kashcheev, B. L., Lebedinets, V. N.

TITLE: Concerning the Structure of the Quadrantid Meteor Stream

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol 37, Nr 1, pp 119-122 (USSR)

ABSTRACT: In their previous paper (same journal, Vol 36, p 629, 1959), the authors proposed a method of finding the distribution of meteoric bodies according to their mass by measuring the duration of the radar signals. The method was applied to the stream of Geminids. Here they apply the same method to the observed radar echoes of the Quadrantids. The number of stream meteors exceeded considerably that of sporadic meteors during 13 hr, from January 3, 21^h U.T. to January 4, 10^h U.T. The observations were divided into four groups according to the duration of the echoes, the largest group

Card 1/3

Concerning the Structure of the Quadrantid Meteor Stream

78017
SOV/33-37-1-17/31

mechanism of cometary disintegration and of physical processes contributing to the evolution of meteor streams. The authors thank D. N. Luk'yashko, who made the necessary measurements. There are 5 figures; and 5 references, 2 Soviet, 3 U.K. The U.K. references are: T. R. Kaiser, Radio Echo Studies of Meteor Ionization, Advances Phys., 2, 495 (1953); D. R. W. McKinley, Dependence of Integrated Duration of Meteor Echo on Wavelength and Sensitivity, Canad. J. Phys., 32, 450 (1954); A. Lowell, Meteor Astronomy, London.

ASSOCIATION: Lenin Polytechnic Institute in Khar'kov (Khar'kovskiy politekhnicheskiy institut imeni V. I. Lenina)

SUBMITTED: May 6, 1959

Card 3/3

AM4017340 BOOK EXPLOITATION S/

Kashcheyev, Boris Leonidovich; Lebedinets, Vladimir Nikiforovich

Radar researches of meteoric phenomena (Radiolokatsionny*ye issledovaniya meteorny*kh yavleniy) Moscow, Izd-vo AN SSSR, 61. 0123 p. illus., biblio. 1800 copies printed. Added t.p. in English.

Series Note: Akademiya nauk SSSR. Mezhduvedomstvenny*y geofizicheskiy komitet. V razdel programmy* MGG. Ionosfera i meteory*, no. 7.

TOPIC TAGS: radar, meteor, meteor trail, meteor radar sounding, international geophysical year, radio wave scattering, meteor trail radio scattering, meteor velocity, meteor orbit, meteor radiant, upper atmosphere

PURPOSE AND COVERAGE: Starting from the present status of the physics of meteors and the theory of radio wave scattering by meteor trails, the authors analyze the techniques used and some experimental data obtained during the IGY, by radar meteor sounding at the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Insti-

Card 1/3

AM4017340

tute). Special attention is paid techniques and to the analysis of reliability and completeness of the radio-observation data. The results of measurements of meteor velocities made at Khar'kov at a wavelength of 8 meters during a three year period are discussed. The data include results of measurements of radiants, velocities, and orbits of meteoric bodies as well as results of a study of the upper atmosphere (80 - - 100 km).

TABLE OF CONTENTS: [abridged]:

Card 2/3

AM4017340

SUB CODE: GE, AS SUBMITTED: 14Nov61 NR REF SOV:027

OTHER: 054 DATE ACQ: 13Mar64

Card 3/3

S/035/62/000/003/021/053
A001/A101

AUTHORS: Kashcheyev, B. L., Lebedinets, V. N.

TITLE: Some preliminary results of observations of meteoric activity during IGY - IGC

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 3, 1962, 72-73 abstract 3A535 ("Mezhdunar. geofiz. god. Inform. byull.", 1961, no. 3, 8-12, English summary)

TEXT: The authors review measurments of meteor numbers during the time from December 1957 to January 1960. They note the significance of studying dense central condensations in meteoric streams for astronautics. A comparison of corresponding periods of 1958 and 1959 shows the pronounced similarity of diurnal variations. The complicated structure of Geminid and Quadrantid streams was noted while observing meteoric streams. The high activity of the Lyrid meteoric stream was noted for the first time after 1922. The speeds of Leonids were measured. There are 6 references.

[Abstracter's note: Complete translation] Author's summary

Card 1/1

28702

S/021/61/000/003/006/013
D274/D301

6.4738

AUTHORS: Dudnyk, B.S., Kashcheyev, B.L. and Lebedynets', V.N.

TITLE: Errors in radar measurements of meteor velocity, due to diffusion

PERIODICAL: Akademiya nauk UkrSSR. Dopovidi, no. 3, 1961, 299-302

TEXT: If ambipolar diffusion is taken into account, the expression for the strength of the reflected signal at the receiver input, is

check equation

$$P_R = \frac{P_T G_T G_R \lambda^3 \alpha^2}{16\pi^2 R^3} \left(\frac{e^2}{mc^2}\right)^2 e^{-2\left(\frac{2\pi r_0}{\lambda}\right)^2} |I|^2, \qquad (1)$$

where P_T is the strength of the transmitter, G_T and G_R are the directivity coefficients of the antennas, R - the distance from the meteor

$$I = \int_{-\infty}^{x_0} e^{2\pi i x^2} \cdot e^{-(x_0 - x)} dx; \qquad (2)$$

Card 1/4

Errors in radar measurements...

$$x = \frac{S}{\sqrt{R\lambda}}\ ; \quad x_0 = \frac{S_0}{\sqrt{R\lambda}}\ ; \quad \Delta = \frac{16\pi^2 D\sqrt{R}}{V\cdot\lambda^{3/2}}\ ; \qquad (3)$$

where S is the distance along the trail from the point of mirror reflection, S_0 - the coordinate of the head of the trail, V - the meteor velocity, D - the coefficient of ambipolar diffusion. Neglecting the broadening of the trail while the principal Fresnel zones are formed, one obtains the ordinary Fresnel integral

$$I \approx e^{-\frac{16\pi^2 Dt}{\lambda^2}} \int_{-\infty}^{x_0} e^{2\pi i x^2}\cdot dx. \qquad (4)$$

The positions of the maxima and minima of the diffraction pattern, computed by formula (4), are used for calculating the velocity of meteors, T.R. Kaiser (Ref. 1: Advances Phys., 2, 495 (1953)). The authors carried out, for various values of Δ, numerical integration by formula (2), and determined the exact position of the maxima and minima of the diffraction pattern. Comparing them with the

Card 2/4

Errors in radar measurements...

results obtained by using formula (4), the errors in using approximation (4) were obtained. A figure shows the errors in velocity-values related to the function Δ for the following velocity-measurements: v_1 - measured by the distance between the first and second maximum, v_2 - between first and third, v_3 - between first maximum and first minimum. (The error resulting from measurements by the distance between first and second minimum (v_4) never exceeded 2%). The figure shows that for $\Delta = 1$, the errors of v_1 and v_2 are 12.9 and 25%, respectively. For $\lambda = 8$ m, $v = 40$ km/sec, $R = 200$ km, to $\Delta = 1$ corresponds an altitude of approximately 100km. As at altitudes above 95 km, a large number of meteors is found, diffusion may lead to considerable errors in velocity measurements. Normally, the diffusion coefficient is found (according to formula (4)), by the exponential drop in the amplitude of the reflected signal. The velocity can be also found by measuring the amplitude ratio at the moments of the first and second maximum, and by the relationship between the distances between the first maximum and first minimum, and first minimum and second maximum. A special

Card 3/4

25489
S/021/61/000/005/009/012
D215/D304

3.1700 (1046, 1126, 1060)

AUTHORS: Kashcheyev, B.L., Lahutin, M.F., and Lysenko, I.A.

TITLE: Investigating individual radiants of the geminides shower

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 5, 1961, 623 - 626

TEXT: During the 1958 IGY it was arranged at the Khar'kov Polytechnic Institute to determine the orbits and speeds of meteor particles as well as the velocity and direction of the drift of ionized traces. Trajectories of meteor particles were investigated by observing radio echos of three separate receiving stations. The radiolocating apparatus consisted of a transmitter, and high sensitive receiver, working on 8 m waves, and from the receiving stations 4 and 8 km distant from the home station. Signals received at these stations were transmitted back to the home station and, together with the signals received directly at the home station, were regi-

Card 1/3

Investigating individual ...

stered on photofilm. In one day, an apparatus like this can register 150 orbits of meteors up to 7^m stellar magnitude. From December 9-14, 1959 in the maximum epoch of gemenides shower, more than 400 registrations were received. Using the 'Ural' computer the elements of the orbits were calculated. The results were compared with the results from Jodrell Bank (England) and the Harvard Observatory (USA), with a good coincidence. From this data the daily change for the radiant was found: $\Delta\alpha \simeq + 0.90$ $\Delta\delta \simeq - 0.25$. This method of finding the radiants of separate meteors allows one to measure the mean velocity of the meteors with greater accuracy. The value calculated was 35.5 km/sec. which is the mean value obtained from the large number of meteor velocities; their radiants were grouped round the mean value of the registered radiant. It was established that in the range 30-40 km/sec. the decrease in the meteor velocity before reaching the point of maximum ionization was 0.6 km/sec. Therefore, the preatmospheric velocity of the gemenides shower was 36.1 km/sec. which appears to be in close conformity with F.L. Whipple's results (Ref. 3: Astr. Jour. 59, 201, 1954). Experiments

Card 2/3

Investigating individual ...

showed also that in 10 % of cases the accuracy is restricted by the influence of the turbulent action of winds. There are 1 table, 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: J.C. Gill, and J.G. Davies, Mon. Nat. Royal Astron. Soc. 116, 105, 1956; F.L. Whipple, Astr. Journ. 59, 201, 1954.

ASSOCIATION: Kharkivs'kyy politekhnichenyy instytut (Khar'kov Polytechnic Institute)

PRESENTED: V.G. Bondarchuk, Member AS UkrSSR

SUBMITTED: May 25, 1960

Card 3/3

S/058/62/000/008/111/134
A160/A101

AUTHORS: Kashcheyev, B. L., Lysenko, I. A.

TITLE: An investigation of the circulation of the atmosphere at an altitude of 80 - 120 km

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 29, abstract 8Zh205 (In collection: "Ionosfern. issledovaniya. No. 9". Moscow, AN SSSR, 1961, 7 - 13; summary in English)

TEXT: The results of measuring the drift of meteor trails are presented. The measurements were carried out at the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute) from March to August 1960. The measurements were conducted at a frequency of 36.9 Mc by the coherent-pulse radar method. (Referativnyy zhurnal, Geofizika, no. 11, 1956, 33265; 1961, 2G43). The results are presented in the form of graphs. The results obtained in Khar'kov are also compared with the results obtained in Jodrell Bank in 1958 - 1959.

[Abstracter's note: Complete translation]

Card 1/1

35219
S/035/62/000/002/023/052
A001/A101

3.2440 (1041)
3.1710 (1126, 1127)

AUTHOR: Kashcheyev, B. L.

TITLE: The study of quantity of meteors (On results of IGY)

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 2, 1962, 59, abstract 2A496 ("Mezhdunar. geofiz. god. Inform. byul.", 1961, no. 9. 26-28)

TEXT: The author presents the results of an analysis of meteor quantity from radar observations of the Khar'kov Polytechnich Institute in 1958-1959. The pulse equipment on the 36.5 Mc frequency was employed. The pulse duration was 10 μsec, power $\sim$ 90 kw, the reiteration frequency of the main sequence of pulses 500 cps. The antenna was directed eastwards at an angle of 35° to the horizon. As a result of examining over 300,000 reflections from meteor trails, it was discovered that during 24 hours there was observed from one to three peaks of meteor quantity: 1) during the transit across the visual field apex; 2) 1-2 hours prior to the Sun transit; 3) 1-2 hours after the transit of the antisolar point. Meteor activity in January-March is lower by 1.5 - 2 times than in May-October. It is concluded that in May-October the Earth

Card 1/2

The study of quantity of meteors ...

S/035/62/000/002/023/052
A001/A101

crosses a wide belt of orbits of meteoric bodies originating sporadic meteors and spread summer streams, the Earth passing "from outside inwards" in May-July and "from inside outwards" in August-October.

P. Babadzhanov

[Abstracter's note: Complete translation]

Card 2/2

9.4210

S/058/62/000/008/108/134
A160/A101

AUTHORS: Taran, V. I., Kashcheyev, B. L.

TITLE: An investigation of the limiting polarization of radio waves reflected from the ionosphere at frequencies of 2 - 6 Mc

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1962, 28, abstract 8Zh199 (In collection: "Ionosfern. issledovaniya. No. 9". Moscow, AN SSSR, 1961, 47 - 53; summary in English)

TEXT: A description is given of the equipment and method of investigating the limiting polarization of radio waves reflected by the ionosphere. The results of measurings carried out at the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnic Institute) in 1959 are presented.

[Abstracter's note: Complete translation]

Card 1/1

29573
S/033/61/038/004/007/010
E133/E135

3,2440 (1041,1395)

AUTHORS: Kashcheyev, B.L., Lebedinets, V.N., and Lagutin, M.F.

TITLE: Radio echo determinations of the orbits of individual meteors

PERIODICAL: Astronomicheskiy zhurnal, vol.38, no.4, 1961, 681-691 + 1 plate

TEXT: The results obtained from visual observations of meteors are summarised in Ref.1 (F.L. Whipple, Astron. J., Vol.59, 201, 1954). The radio echo method of observing meteors has been in use at Jodrell Bank since 1958 (Ref.2: J.C. Gill, J.G. Davies, Monthly Notices Roy. Astron. Soc., Vol.116, 105, 1956). One result has been the discovery of large numbers of faint meteors (7-8 mag.) with almost circular orbits inclined at a large angle to the ecliptic (Ref.3: Meteory, Sbornik statey, IIL (Meteors, Symposium, IIL) 1959). The lifetime of these particles must be small (Ref.4: L. Kresák, Byul. Astron. in-tov Chekhoslovakii (Bulletin Astronom. Instit. Czechoslovakia) Vol.11, 1, 1960). Apparatus was installed at Khar'kov in December 1958 for the determination of individual meteor orbits. Observations have been

Card 1/7

Radio echo determination of the ....

made since August 1959. The general layout is indicated in Fig. 1. The radio-location equipment is at O, Б and K, where OБ = = 7100 m and OK = 4500 m (± 10 m). The transmission frequency is 36.9 Mc/s and the duration of the impulse is 10 microsec at 500 impulses per sec. The stations at Б and K transmit the data they receive back to O, after amplification. The resultant traces are photographed together. An example is shown in Fig. 2 (where the sinusoidal curve gives the Doppler frequencies determining the drift of the track). The position of the radiant and of the meteor orbit is determined by Kleiber's method (Ref. 7: I.A. Kleiber, Opredeleniye orbit meteornykh potokov, SPb, 1891 (Determination of the orbit of a meteor stream)) and is done by an electronic computer; otherwise it would be impossible to reduce all the data. In order to check the accuracy of the calculated orbits, observations were made of 298 members of the Geminid stream during December 9-14, 1959. The authors first consider the braking effect of the Earth's atmosphere so that they can deduce the velocity outside the atmosphere from the observed velocity. They arrive at the equation:

Radio echo determination of the ...

$$\Delta v_m = -\frac{1.22}{v_0 \sigma} \qquad (15)$$

which gives the velocity change in terms of the initial velocity and the parameter σ (the coefficient of heat transfer). They assume that $\log \sigma = -11.2$ and that it does not vary much with the mass (Ref.11: L.G. Jacchia, Smith. Contrib. Astroph., Vol.2, No.9, 1958). They find that a correction of $\sim$0.6 km/sec should be made, therefore, to the observed Geminid velocity. The resultant r.m.s. error in the velocity measurements is $\pm$1.8 km/sec for a single meteor. This is due to four causes: a) inaccuracies in the allowance for atmospheric braking; b) the effect of atmospheric turbulence on velocity measurements; c) errors in velocity measurements due to diffusion of the meteor track; d) inaccuracy in the readings of the number of impulses per Fresnel zone. The data on the Geminids indicate a systematic change in the position of the radiant, and the orbital elements, with solar longitude. The authors compare their results with optical measurements for meteors of magnitude -5 to 0 (F.L. Whipple, Ref.1) and for meteors of magnitude 0 to +3 (Ref.14: G.S. Hawkins,

Card 3/5

Radio echo determination of the ...

R.B. Southworth, Harv. Reprint Series II-128, 1958). The average orbital elements of fifteen meteors in Ref.1 agree with the present measures, as does the systematic change in the orbital elements. The results in Ref.14 appear to be less accurate, but also agree with the limits of error. That there was a change in the position of the radiant was already known, but this change in the orbital elements is new. Since it appears to be connected with the mass of the particles, it can only be explained by some form of braking of the meteors (e.g. by the Poynting-Robertson effect). Previous observations (Ref.17: B.L. Kashcheyev, V.N. Lebedinets, Astron. zh., Vol.36, 629, 1959) indicate that on the night of December 12-13 1959, a maximum was observed for meteors in the range 2-4 mag., but on the following night (13-14) the maximum was at about zero magnitude. It can be estimated from this, on the basis of the Poynting-Robertson effect, that the age of the stream is about 30 000 years (assuming a meteor density of 4 gm/cc).

There are 8 figures, 3 tables and 18 references: 10 Soviet-bloc and 8 non-Soviet-bloc. The four most recent English language references read as follows:

Card 4/7
5

43280

3,2500

S/831/62/000/008/001/016
E032/E114

AUTHORS: Kashcheyev, B.L., Dudnik, B.S., Lagutin, M.F., Lebedinets, V.N., Luk'yashko, D.N., and Lysenko, I.A.

TITLE: Radar observations of meteors at Khar'kov

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 7-20

TEXT: This paper reports the results of analyses of radio echoes from meteor trails which were recorded at the Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina (Khar'kov Polytechnical Institute imeni V.I. Lenin) during July 1957 - May 1959. The observations were in accordance with the IGY programme and were carried out at 73.2 Mc/sec and 36.9 Mc/sec. Special measures were taken to suppress extraneous interference. Pulse lengths of ten microseconds were employed at repetition frequencies up to 500 cps and power per pulse ~50-70 kW. The detector sensitivity was 5×10^{-14} W. The half-power beamwidth in the final

Card 1/3

experiments was ± 20° (vertical plane) and ± 17° (horizontal plane). The meteor velocities were measured by a diffraction method in which the velocities relative to earth were determined from signal amplitude fluctuations. Altogether 300 000 reflections from sporadic meteors were recorded and average diurnal variations in the number of meteors were obtained throughout the period. Fig. 10 shows three typical distributions (number of meteors versus mean sidereal time). The velocity distributions were also determined as functions of time and are reproduced in the paper. Finally, the mass distribution of sporadic meteors was found from the lengths of the reflected pulses. It was found that

$$N = N_0 m^{s-1} \quad \text{where} \quad s \sim 2.$$

Owing to the large beamwidth, weak meteor showers could not be detected against the sporadic background. Brief details are given about the following showers which were the only reliably detected showers; Quadrantids, Lyrids, Geminids, η-Aquarids and Arietids (daytime). There are 16 figures.

Card 2/3

43281

3.2440
9.9600

S/831/62/000/008/002/016
E032/E114

AUTHORS: Dudnik, B.S., Kashcheyev, B.L., and Lebedinets, V.N.

TITLE: The effect of diffusion on radar measurements of the velocity of meteors

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 21-25

TEXT: It is noted that in all meteor velocity determinations the expansion of the meteor trail during the time of formation of the main Fresnel zones is neglected and hence the position of the maxima and minima of the diffraction pattern from which the meteor velocities are computed are found from the usual Fresnel integral

$$I \approx e^{-\frac{16\pi^2 Dt}{\lambda}} \int_{-\infty}^{x_0} e^{2\pi i x^2} dx \qquad (3)$$

where D is the coefficient of ambipolar diffusion and λ is the wavelength.

Card 1/ 4

T.R. Kaiser (Advances Phys., 2, 1953, 495) is said to have arrived at the erroneous conclusion that if

$$\Delta = \frac{16\pi^2 D \sqrt{R}}{v\lambda^{\frac{3}{2}}} \leqslant 2$$

where R is the oblique range to the meteor and v is its velocity, then the approximate expression for I given above does not introduce appreciable errors into the velocity calculation. The present authors have carried out a numerical integration of the more exact expression

$$I = \int_{\infty}^{x_o} e^{2\pi i x^2} e^{-\Delta(x - x_o)} dx \qquad (2)$$

where $x = \frac{s}{\sqrt{R\lambda}}$, $x_o = \frac{s_o}{\sqrt{R\lambda}}$

and s is the distance along the trail measured in the direction of motion of the meteor from the point of specular reflection;

Card 2/4

s_o is the value of s at the head of the trail. Fig.1 shows the calculated relative errors in the above approximate velocity as a function of Δ (curve a - velocity determined from the distance between the first and second maxima; curve b - velocity determined from the distance between the first and the third maxima; curve c - velocity determined from the distance between the first maximum and the first minimum). When $\Delta = 1$, the errors for a, b and c are found to be 12, 9 and 25% respectively. When the velocity is determined from the distance between the second and third maxima the error is never greater than 2%. Numerical data are reproduced for meteors observed in accordance with the IGY programme. It is noted that when $\Delta > 1.5$, the diffusion coefficient can no longer be determined from the tail of the reflected signal because this tail is no longer exponential. However, Δ can be found by measuring the ratio of the amplitudes at the first and second maxima. The diffusion correction reaches about 5% at velocities of 20 km/sec and heights of about 90 km when the velocity is determined from the distance between the first and second maxima. When the velocity is 60 km/sec the 5% level

occurs at about 97 km. Since diffusion has the maximum effect on the position of the first maximum of the diffraction pattern, it is recommended that at heights greater than 90 km it is better to use maxima other than the first maximum.
There are 3 figures and 2 tables.

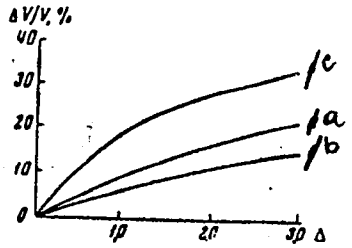


Fig. 1

Card 4/4

43282

3,2440

S/831/62/000/008/003/016
E032/E114

AUTHORS: Kashcheyev, B.L., and Lebedinets, V.N.

TITLE: A radar study of the structure of meteor showers

SOURCE: Ionosfernyye issledovaniya (meteory). Sbornik statey, no.8. V razdel programmy MGG (ionosfera). Mezhduved. geofiz. kom. AN SSSR. Moscow, Izd-vo AN SSSR, 1962, 26-38

TEXT: Systematic studies of the structure of major meteor showers began in December 1958 at the Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina (Khar'kov Polytechnical Institute imeni V.I. Lenin). The apparatus employed was described in an earlier paper (B.S. Dudnik, B.L. Kashcheyev, M.F. Lagutin, I.A. Lysenko, Radiotekhnika i elektronika, v.3, 1958, 1379). The measurements were carried out at 36.9 Mc/sec using a seven-element Yagi antenna. The half-power beamwidth was about $\pm 20^{\circ}$. The present paper reports the results for the Geminids, Quadrantids and Lyrids. In each case a determination was made of the total number of meteors and the length of the reflections. Estimates based on experimental data for about 22 000 sporadic meteors and

Card 1/3

A radar study of the structure ... S/831/62/000/008/003/016
E032/E114

the Jodrell Bank data (T.R. Kaiser. Meteors. London, 1950) showed that it was possible to detect masses from 0.0003 g upwards for the Geminids and from 0.0002 g upwards for the Quadrantids. The only assumption for these estimates was that the meteor bodies responsible for sporadic meteors have a mass distribution of the form $N(m) = N_0(m)^{-s}$ with the same value of s. A preliminary report on the Geminids and Quadrantids was given in previous papers by B.L. Kashcheyev and V.N. Lebedinets (Astr. zh. 36, 1957, 623, and Astr. zh. 37, 1960, 119). The present report gives the results of new analyses in which the sporadic meteor background was taken into account more carefully. The log N versus log τ curves were plotted for different times and each of the above three meteor showers (N-number of meteors with reflection lengths greater than τ). The data show that the central regions of meteor showers have a very complicated structure. The explanation of this structure is said to be very important to the study of disintegration of cometary nuclei and the evaluation of meteoric swarms. It was

Card 2/3

found that the Lyrids have a very narrow central region of high activity. This suggests that many showers which are considered to be of low activity may in fact contain dense particle swarms of various dimensions which may be missed in experimental studies owing to the unfavourable position of the radiant while the earth passes through the swarm. For example, it is noted that the systematic studies at Jodrell Bank did not lead to the discovery of the above enhanced activity. The main reason was that the antennas employed had a very narrow directional pattern. In visual observations the probability that this short-period phenomenon may be missed is even greater.
There are 6 figures.

Card 3/3

CHEPURA, V.F.; KASHCHEYEV, B.L.; BONDAR', B.G.

Study of the directional features of the scattering of microwave signals by meteor trails. Elektrosviaz' 16 no.11:3-10 N '62. (MIRA 15:11)

(Meteors) (Microwaves)

BABADZHANOV, P. B.; KASHCHEYEV, B. L.; KRAMER, Ye. N.; TSESEVICH, V. P.

"The Research of the Meteors during the IGY in the USSR."

abstract presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 19-31 Aug. 63.

S/3105/63/000/02-/0005/0011

ACCESSION NR: AT4043265

AUTHOR: Kashcheyev, B. L.

TITLE: Meteors in the upper atmosphere

SOURCE: Kharkov. politekhnicheskiy institut. Kafedra osnov radiotekhniki. 5 razdel programmy* MGG: Ionosfera i meteory*. Meteory*; sbornik statey, no. 2/3, 1963, 5-11

TOPIC TAGS: meteor, meteor trail, upper atmosphere, atmospheric circulation, wind, wind velocity, radioastronomy

ABSTRACT: The author reviews the progress made in the study of meteors in connection with the International Geophysical Year, principally from the points of view of astronomy and geophysics, and the use of radiolocation equipment. He first summarizes the parameters of the radiolocation equipment used at the Khar'kovskiy politekhnicheskiy institut (Khar'kov Polytechnical Institute), which operates at a wavelength of 8.13 m and is capable of detecting meteors having an absolute magnitude of $+7^m$, $+8^m$. Information has been obtained at the Institute on meteor velocities, orbits of individual meteors, ambipolar diffusion, height determination, radial component of the wind in a fixed direction and

1/3

Card

ACCESSION NR: AT4043265

simultaneous behavior of the winds at a number of points. About 1.5 million meteors were recorded at Khar'kov in the period 1957-60, all of the sporadic type. Maxima were observed during passage through the center of the field of vision of a point 90° from the apex; 1-2 hours before passage of the sun, 1-2 hours after passage of the aphelion. In 1959, the orbits of Geminid, Arietid and Aquarid meteors were determined by radio location methods and the results obtained were found to be in agreement with photographic determinations in the United States and radio-measurements in the United Kingdom. The distribution of 360 sporadic meteors is analyzed briefly. From the geophysical point of view, the most important results to be obtained by the radio-method relate to atmospheric circulation. Measurements between March 1960 and February 1961 showed that motion in the meteor zone could be described by the following equations:

$$u = 2{,}5 + 2{,}8 \sin \frac{\pi}{12}(t + 4{,}00) + 15{,}2 \sin \frac{\pi}{6}(t + 5{,}33) + \cdots + 2{,}9 \sin \frac{\pi}{4}(t + 6{,}4); \quad (1)$$

$$v = 13{,}5 + 1{,}1 \sin \frac{\pi}{12}(t + 9{,}0) + 16{,}3 \sin \frac{\pi}{6}(t + 8{,}16) + \cdots + 2{,}9 \sin \frac{\pi}{4}(t + 9{,}6). \quad (2)$$

Card 2/3

ACCESSION NR: AT4043265

The constant velocity component of the wind, which varied from month to month, was directed toward the east (90 ± 50°) except in October and averaged 14 m/sec. The author goes on to discuss the influence of the diurnal and semidiurnal components of wind velocity on the drift of meteor trails. Orig. art. has: 6 formulas.

ASSOCIATION: Kafedra osnov radiotekhniki, Khar'kovskiy politekhnicheskiy institut (Department of Basic Radio Technology, Khar'kov Polytechnical Institute)

SUBMITTED: 00 ENCL: 00

SUB CODE: AA, ES NO REF SOV: 011 OTHER: 007

Card 3/3

KASHCHEYEV, B.L.; TARAN, V.I.

Measurements of drifts of ionization homogeneities in the atmospheric E-layer with simultaneous determination of the polarization of reflected radiowaves. Meteory; sbor. st. no. 2/? 37-42 '63. (MIRA 17:5)

KASHCHEYEV, B.L.

Investigating the properties of upper atmosphere by means of radio observations of meteors. Meteory; sbor. st. no. 2/3: 43-54 '63. (MIRA 17:5)

L 10003-63 EWT(1)/EWG(k)/FCC(w)/BDS/EEC-2/ES(t)-2/ES(v)—
AFFTC/ASD/ESD-3/APGC/SSD—Pz-4/Pg-4/P1-4/P1-4/Pe-4—GW
ACCESSION NR: AP3001132 S/0106/63/000/006/0002/0009 87

AUTHOR: Kashcheyev, B. L.; Chepura, V. F.; Bondar', B. G.

TITLE: An investigation of UHF radio signal scattering by meteor trails

SOURCE: Elektrosvyaz', no. 6, 1963, 2-9

TOPIC TAGS: radio signal scattering, meteor trails, UHF oblique scattering, duration distributions, transmission speed

ABSTRACT: An experimental study of the oblique scattering of ultrashort waves by meteor trails was carried out over a 900-km path. Both 31.2- and 48-Mc transmitters were used in the measurements. The 31.2-Mc transmitter was modulated by a code consisting of two pulses with durations of 20 + 10 microsec and having a peak power of 30 kw at 50 cps prf. The 48-Mc transmitter was modulated by 100-cps square waves with peak power of 1 kw. The bandwidths of the 31.2- and 48-Mc receivers at the 3-db level were 225 kc and 600 cps, respectively. Both transmission and reception were carried out with the aid of Yagi antennas placed at a height of 1.5 wavelengths above the ground. The

Card 1/2

L 10003-63
ACCESSION NR: AP3001132

total duration of meteor signals for 31.75 hours of observations was 3026 sec, while the total duration of "repeated" signals, i.e., signals shifted in time which are caused by scattering and which accompany the main signal, was 280 sec for the same period of time. The maximum observed time shift of repeated signals was 770 microsec. Since the degree of allowable distortion due to repeated signals determines telegraphic transmission speeds, the 770-microsec time shift would limit this speed to 650 band. Certain statistical regularities which characterize the duration and amplitude distribution of signals, time intervals between signals, and the dependence of the signal on the time of day and season were also studied. Orig. art. has: 12 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 26Dec61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 000 OTHER: 004

Card 2/2

upper atmosphere, wind, earth atmosphere wind, meteor
observation

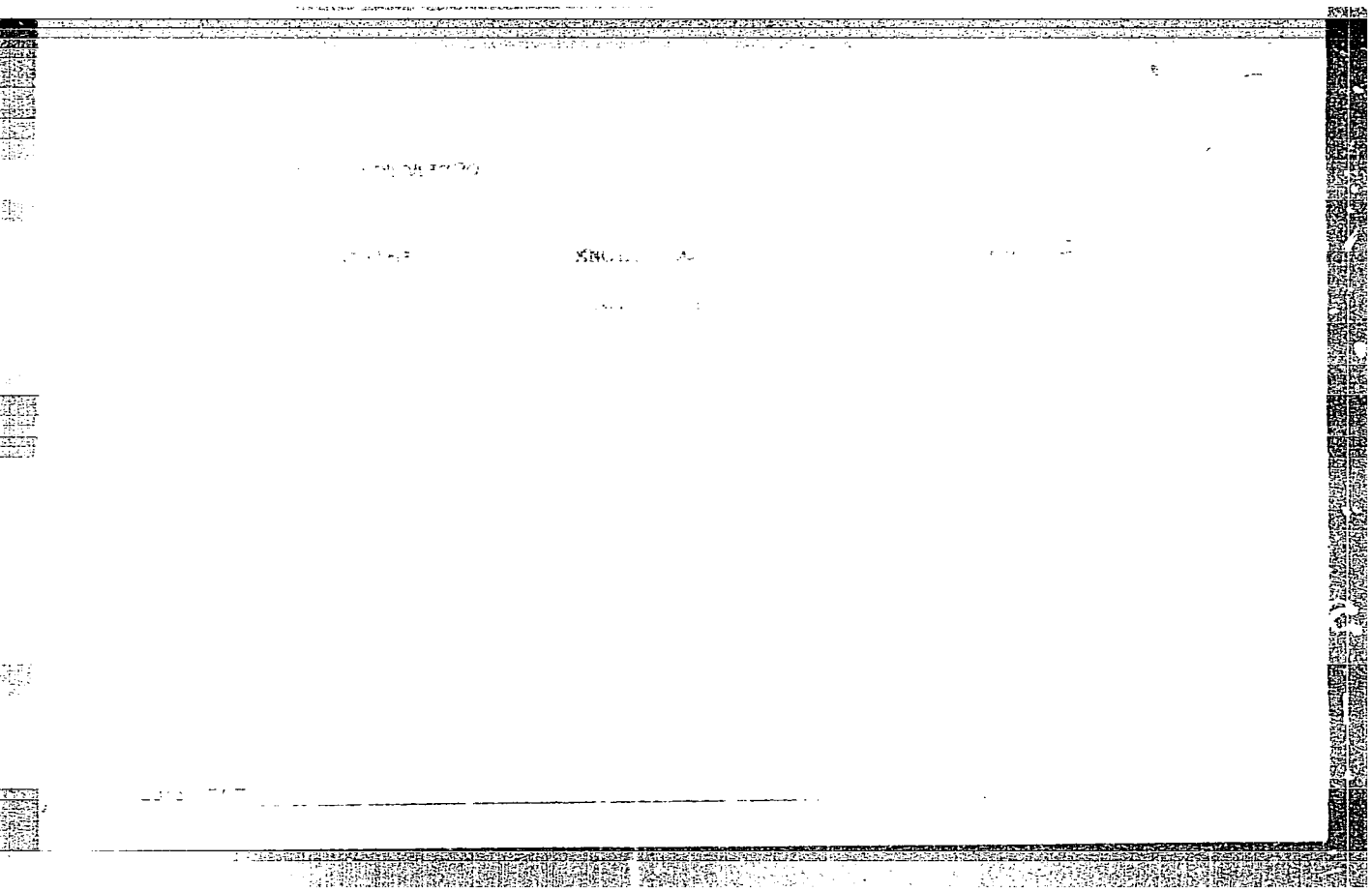
...N UkrRSR. Dopovidi, no. 9, 1964, 1051-1054

The authors present the results of systematic investigations of tur-

L_2 = 90 km, vertical L_0 = 6.3 km.

[illegible] politekhnicheskiy institut, Turkey Polytechnic

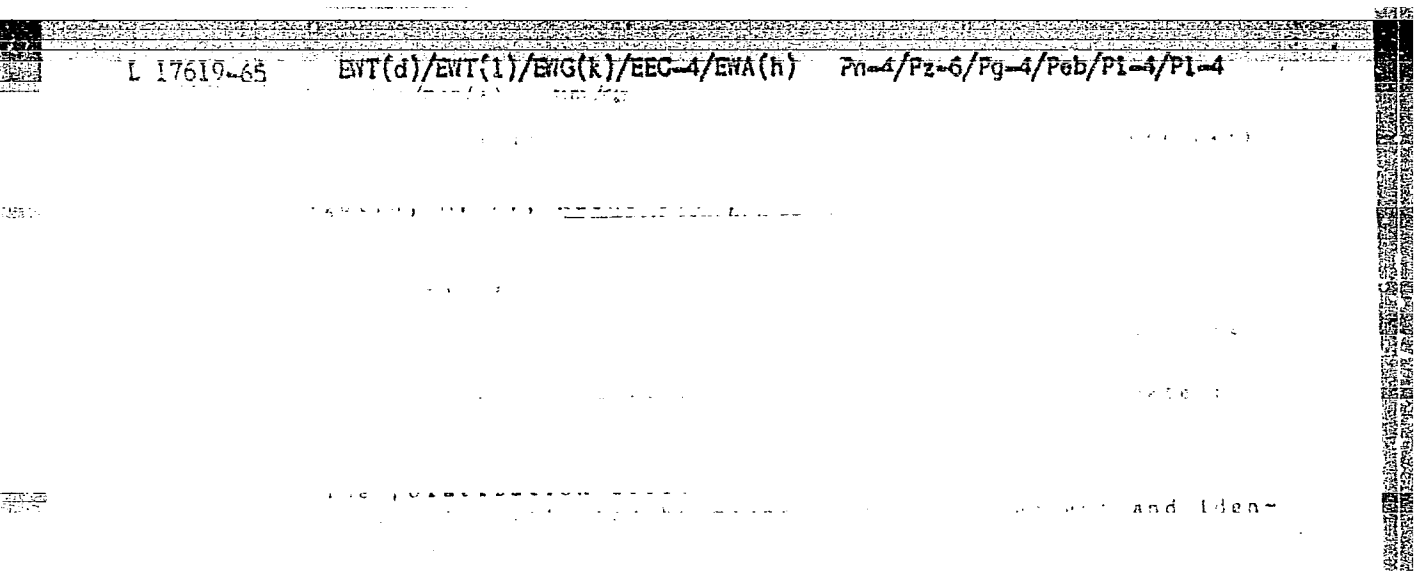
Card 1/2

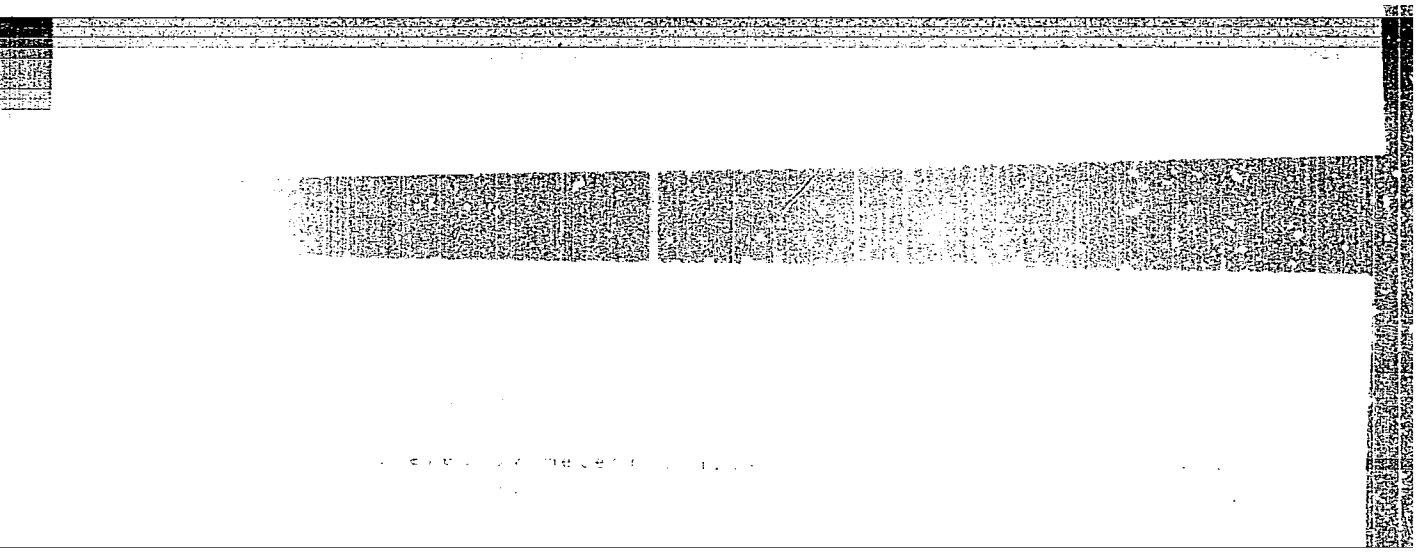


APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010014-5"

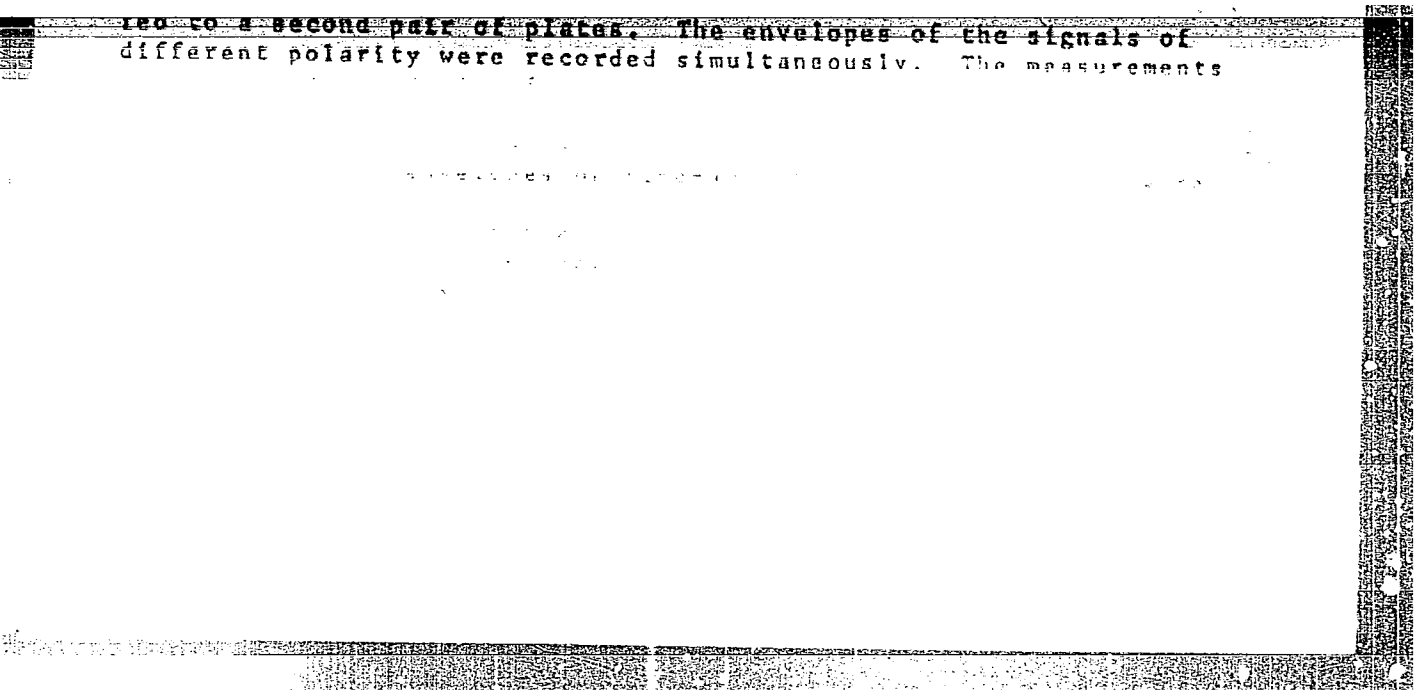
BABADZHANOV, P.B.; KASHCHEYEV, B.L.; KRAMER, Ye.N.; TSESEVICH, V.P.

Study of meteors during the IGY. Geofiz. biul. no.14:83-88 '64.
(MIRA 18:4)





APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721010014-5"

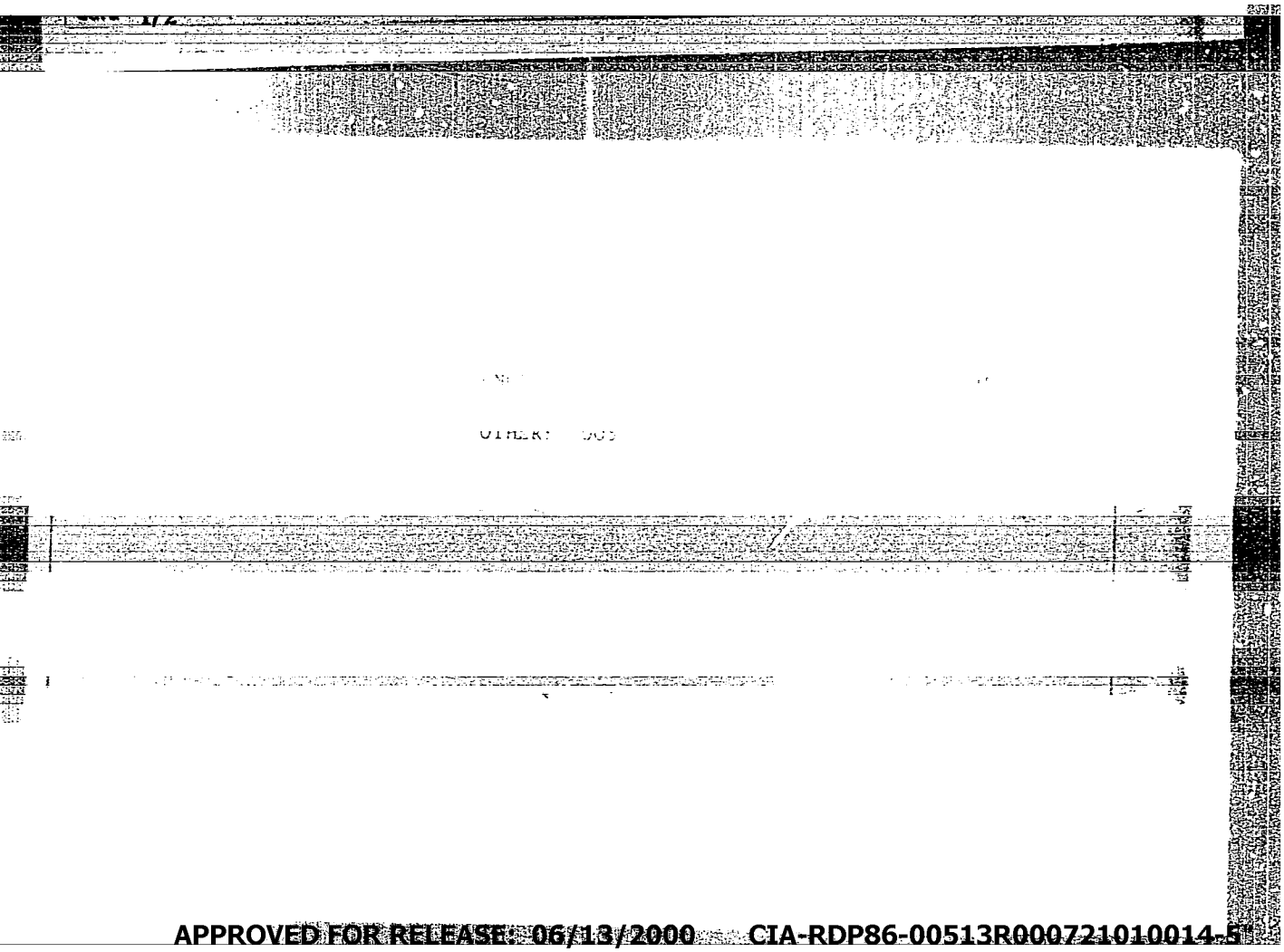


fed to a second pair of plates. The envelopes of the signals of different polarity were recorded simultaneously. The measurements

KASHCHEYEV, V.L.; TSESEVICH, V.P.; FEDYNSKIY, V.V.; doktor fiz.-matem. nauk; otv. red.; ZHITNIKOVA, S.A., red.

[Study of atmospheric circulation in the meteor zone] Issledovanie tsirkuliatsii atmosfery v meteornoi zone. Moskva, Nauka, 1965. 63 p. (MIRA 18:4)

1. Politekhnicheskiy institut im. V.I.Lenina, Khar'kov (for Kashcheyev). 2. Astronomicheskaya observatoriya Gosudarstvennogo universiteta im. V.I.Mechnikova, Odessa (for TSesevich).



L 1943-66 EWT(1)/FCC/EWA(d)/EWA(h) GS/GW

ACCESSION NR: AT5024192 UR/0000/65/000/000/0081/0086

AUTHOR: Kashcheyev, B. L.

TITLE: Drift of meteor trails

SOURCE: AN UkrSSR. Fizika komet i meteorov (Physics of comets and meteors). Kiev, Izd-vo Naukova dumka, 1965, 81-86

TOPIC TAGS: meteor trail, atmospheric movement, upper atmosphere, geostrophic wind, wind velocity

ABSTRACT: Measurements of the drift of meteor trails conducted in 1962 and 1963 by a coherent pulse method at a frequency of 36.9 Mc are briefly described. Values of 12-hr and 24-hr variations in the velocity of zonal and meridian wind components were determined. For each diurnal period, a semidiurnal component with an amplitude of about 10—30 m/sec was found to be characteristic. Fig. 1 of the Enclosure shows diurnal variations of wind velocity. Semiannual values for both the zonal and the meridian components were also obtained. At an altitude of 90—95 km, the meridian component is small. By considering the results of measurements of meteor trail drift and by taking into account the geostrophic character of the wind in the meteor zone, it was concluded that temperatures above the pole are lower from November

Card 1/3

L 1943-66

ACCESSION NR: AT5024192

through February and from May through August. The curve describing the altitude gradient of the wind velocity has a semiannual period of variations with maxima in the winter and in the summer. Large (in comparison with ground conditions) amplitudes of the 12-hr component in the meteor zone are attributed to resonance phenomena, which in turn are of solar origin. Orig. art. has: 5 figures. [JR]

ASSOCIATION: none

SUBMITTED: 21May65 ENCL: 01 SUB CODE: M,ES

NO REF SOV: 003 OTHER: 006 ATD PRESS: 4115

Card 2/3

L 1943-66
ACCESSION NR: AT5024192

ENCLOSURE: 01

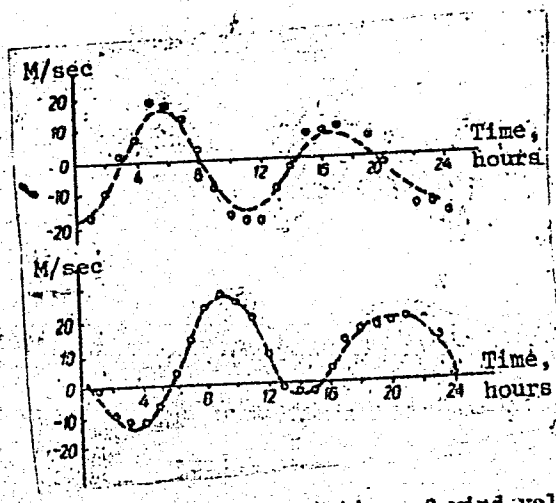


Fig. 1. Diurnal variation of wind velocity

Card 3/3

L 9551-66 EWT(1)/EWA(d) GW
ACC NR: AP5027220 SOURCE CODE: UR/0020/65/164/006/1256/1259

AUTHOR: Kashcheyev, B. L.; Lebedinets, V. N.; Lagutin, M. F. 36 8

ORG: Khar'kov Polytechnic Institute im. V. I. Lenin (Khar'kovskiy politekhnicheskiy institut)

TITLE: Characteristics of the motion of small meteoric bodies

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1256-1259

TOPIC TAGS: meteor detection, meteor observation, radar meteor observation, meteor radiant, meteor trail

ABSTRACT: The authors describe some of the results obtained from a year-long series of radar measurements of individual radiants and velocities of meteors, conducted from Nov. 1959 through Dec. 1960 at the Khar'kov Polytechnic Institute (Khar'kovskiy politekhnicheskiy institut). The velocity measurements were performed by means of the pulse-diffraction method, and the measurements of the radiant coordinates by the method of dispersed reception of radio waves (dispersed on the forming meteor trail). A radar station with an 8-m wavelength was used. The orbits of 12,500 meteoric bodies, which generated meteors brighter than about $+7^m$, were calculated on an electronic computer. In processing the observational data, the authors paid particular attention to the calculation of the effect of the selectivity of the radar method of observation. In converting from the measured distribution of orbits to the true distribution it was necessary to take into account the "geometric factor," the "physical factor," and the "astronomical factor." In addition to the two basic types of orbits of large

Card 1/2 UDC: 523.531

L 9551-66

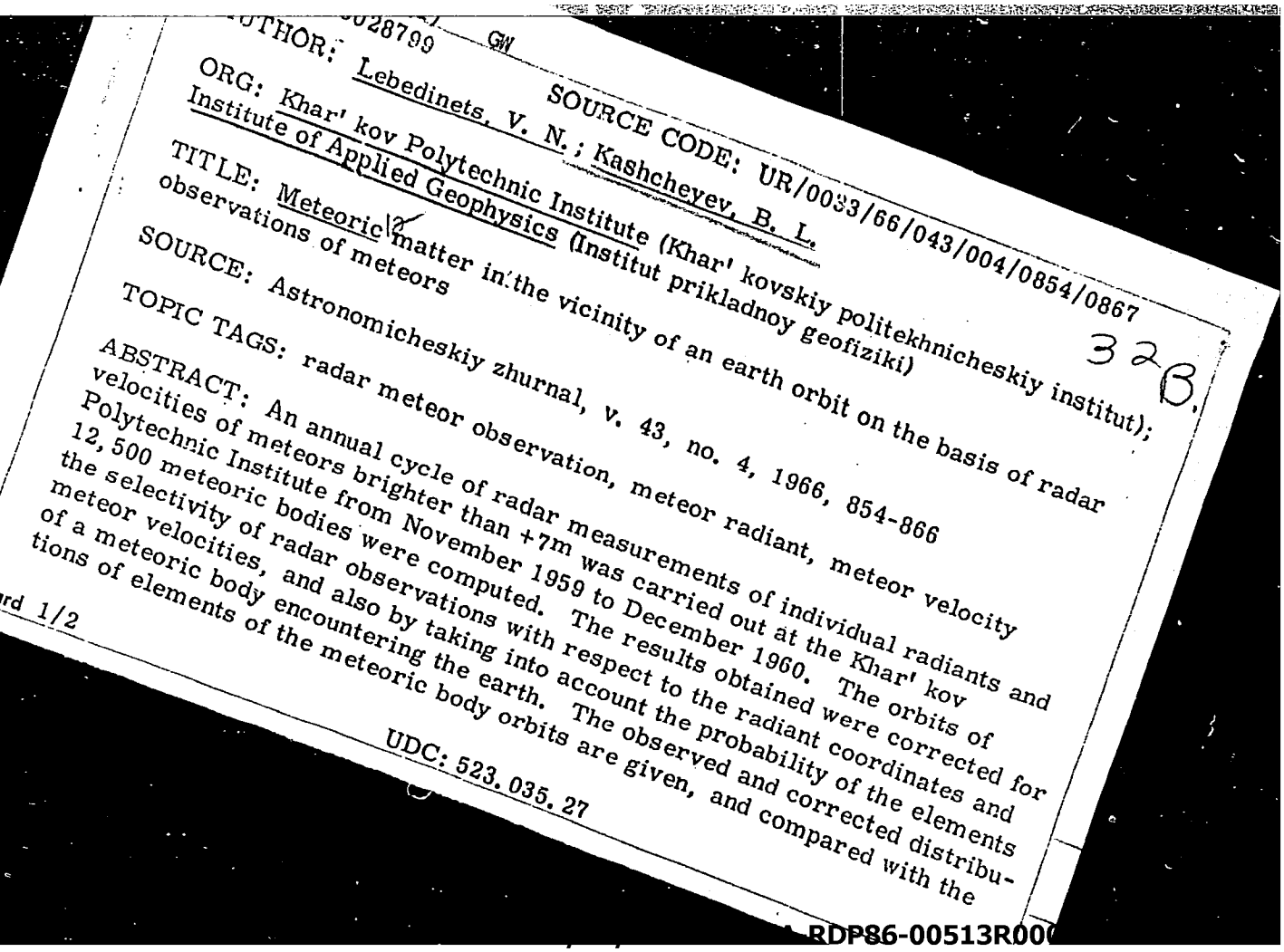
ACC NR: AP5027220

meteors known from photographic observations, the authors found the following: a) orbits with $e < 0.7$ and $30^\circ < i < 165^\circ$, and b) the major portion of the small meteors moves in elongated orbits with $e > 0.7$, which in shape are close to those of short-lived comets but differ from the comets by considerably smaller perigee distances and dimensions ($a < 3$ a.u.) (i is orbit inclination, a is large semiaxis, and e is eccentricity). Photographic observations showed type-b orbits for several meteor showers for which no ancestor-comets were found. The detection of the two new types of orbits is of great significance for the study of the origin and evolution of meteoric substance. The presence of a large number of meteor showers with type-b orbits shows that there should be a large number of short-lived comets with this type of orbit in the solar system. Due to the closeness to the Sun of the perihelion, the lifetime of comets with type-b orbits is very short. Evidently, it is considerably shorter than the lifetime of the existence of the meteor trails generated by such comets. Presented by Academician V. G. Fesenkov March 13, 1965. Orig. art. has: 1 figure and 4 formulas. [08]

SUB CODE: EC, AA / SUBM DATE: 13Mar65 / ORIG REF: 003 / OTH REF: 006/

ATD PRESS: 4157

Card 2/2



028799 GW

SOURCE CODE: UR/0033/66/043/004/0854/0867

AUTHOR: Lebedinets, V. N.; Kashcheyev, B. L.

ORG: Khar'kov Polytechnic Institute (Khar'kovskiy politekhnicheskiy institut); Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Meteoric matter in the vicinity of an earth orbit on the basis of radar observations of meteors

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 4, 1966, 854-866

TOPIC TAGS: radar meteor observation, meteor radiant, meteor velocity

ABSTRACT: An annual cycle of radar measurements of individual radiants and velocities of meteors brighter than +7m was carried out at the Khar'kov Polytechnic Institute from November 1959 to December 1960. The orbits of 12,500 meteoric bodies were computed. The results obtained were corrected for the selectivity of radar observations with respect to the radiant coordinates and meteor velocities, and also by taking into account the probability of the elements of a meteoric body encountering the earth. The observed and corrected distributions of elements of the meteoric body orbits are given, and compared with the

UDC: 523.035.27

Card 1/2

32B

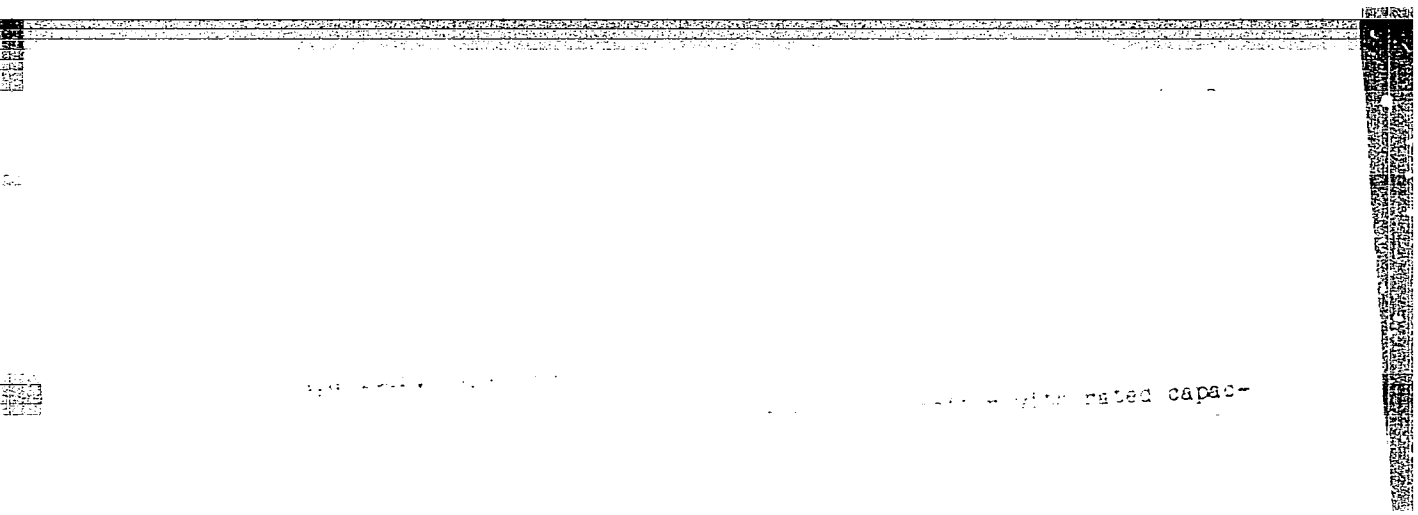
L 47481-66
ACC NR: AP6028799

results of photographic observations. The major axes of the orbits decrease systematically with a decrease in the mass of the meteoric bodies. The radar observations indicate two new principal types of orbits of small meteoric bodies: orbits with $e < 0.7$ and $30° < i < 165°$, and orbits similar to those of short-period comets, differing from the latter in that they have smaller perihelion distances and dimensions. The cosmogonic significance of detecting these types of orbits is discussed. Orig. art. has: 13 figures, 8 formulas, and 2 tables. [NT]
[Based on authors' abstract]

SUB CODE: 03/ SUBM DATE: 09Apr65/ ORIG REF: 006/ OTH REF: 014/

hs

Card 2/2

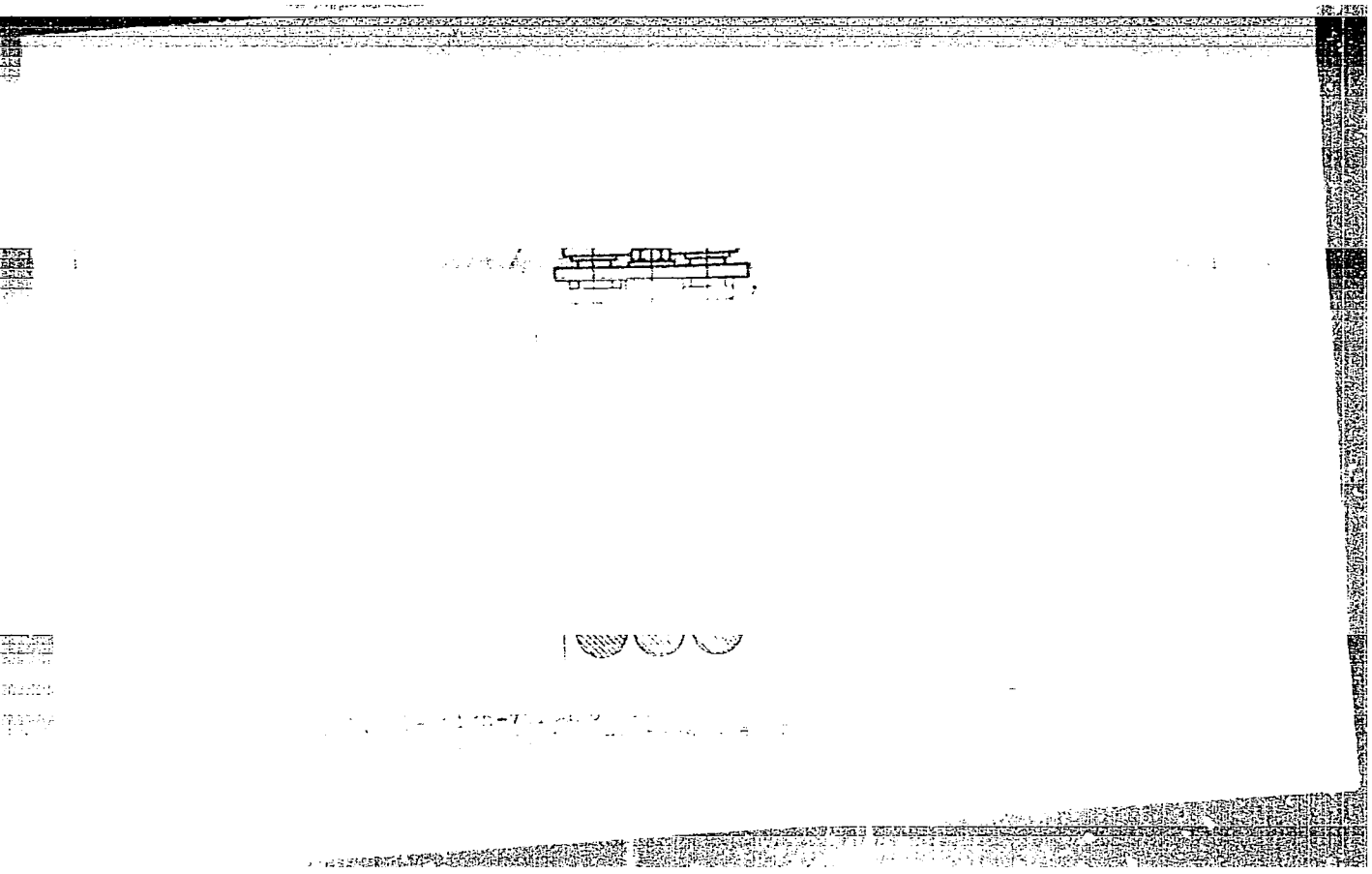


rated capac-

and dimensions. To decrease the frequency [illegible] electrodes are placed symmetrically relative to the [illegible] (see Fig. 1 on the

voltage electrodes, e.g., [illegible]

[illegible], art. has 1 diagram.



L 28359-66
ACC NR: AP6013012 SOURCE CODE: UR/0410/66/000/001/0062/0068

25
B

AUTHOR: Grokhol'skiy, A. L.; Kashcheyev, E. I.

ORG: none

TITLE: On the construction of a precision transformer bridge 10

SOURCE: Avtometriya, no. 1, 1966, 62-68

TOPIC TAGS: capacitance bridge, electric measuring instrument

ABSTRACT: This paper was reported at the VII All-Union Conference on Automatic Control and Methods of Electric Measurements in September 1965 in Novosibirsk. A precision transformer-coupled bridge is described for the measurement of capacitances in the range from 0.01 to 10,000 pF with accuracy 0.001% (Fig. 1). The use of transformer coupling makes it possible to obtain arm ratios over a wide range and with high accuracy. High accuracy is ensured through the use of a special portable model of a standard capacitor invented by the authors (Authors certificate No. 170148 - Byulleten' izobreteniy 1965, no. 10) but with crossing capacitance, based on a principle originally proposed by D. G. Lampard (Monograph N 216M IEE, January 1957). Both the capacitor and the bridge itself are described in detail, and the possible errors are estimated. The bridge is intended primarily to calibrate standard capacitors. Orig. art. has: 4 figures. [02]

SUB CODE: 09/ SUBM DATE: 05Oct65/ ORIG REF: 007/ OTH REF: 003/ ATD PRESS: 4262

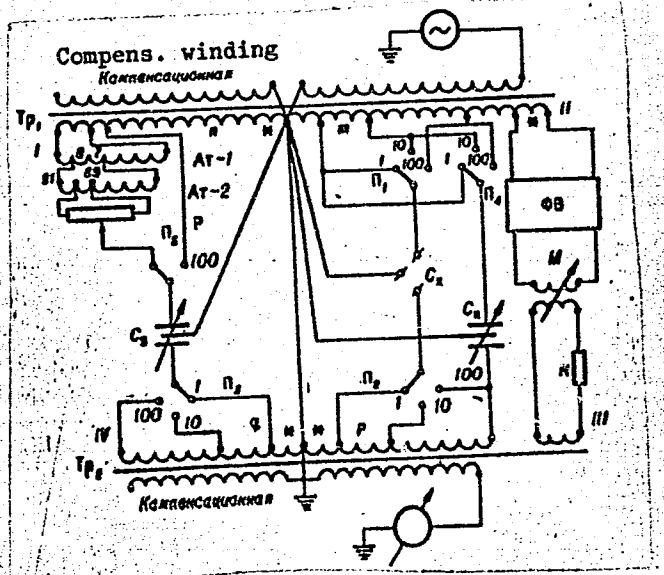
UDC: 621.3.083.4

Card 1/2

L 28359-66
ACC NR: AP6013012

0

Fig. 1. Diagram of bridge



Card 2/2

KASHCHEYEV, G.G.

OF-6 universal ridger. Torf.prom. 35 no.2:26 '58. (MIRA 11:5)

1. Vedushchiy inzhener-konstruktor Vsesoyuznogo nauchno-issledovatel'skogo instituta torfyanoy promyshlennosti.
(Peat machinery)

SOKOLOV, A.A.; PETRENKO, F.F.; KOVALEV, V.F.; YELISEYEV, M.A.; ROZENPLENTER, N.F.; YANCHUKOVICH, A.E.; CHUBAROV, N.D.; KONTSEVOY, N.S.; PREOBRAZHENSKIY, V.A.; BOCHAROV, M.S.; KASHCHEYEV, G.G.; SELENNOV, G.V.; SAFONOV, K.Ye.; FUNIKOV, S.A.; RASKIN, G.I.; RABKIN, B.M.

Vadim Konstantinovich Gutsunaev; obituary. Torf.prom. 39 no.3:37 '62. (MIRA 15:4)
(Gutsunaev, Vadim Konstantinovich, 1914-1942)

KASHCHEYEV, G. N.

Biological Chemistry

Dissertation: "Study of the Solubility of Metallic Oxides in Fusions of Chlorides and Sulfates of Alkali Metals." Cand Chem Sci, Inst of General and Inorganic Chemistry imeni N. S. Kurnakov, Acad Sci USSR, Oct-Dec 1953. (Vestnik Akademii Nauk, Moscow, Mar 54)

SO: SUM 213, 20 Sept 1954

KAZARNOVSKII, G. N.

4

Solubility of barium oxide in fused salts. N. K. Voskresenskaya and G. N. Kazarnovskii. *Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.*, 105-7(1954). —By the method of isothermal satn., the solv. of BaO was detd. in fused LiCl, NaCl, KCl, Li_2SO_4, and Na_2SO_4 at 4 temps. Temps. for LiCl expts. were in the range 700–1000°, for others in the range 900–1200°. The greatest solv. of BaO was in LiCl; in order of decreasing dissolving action were Li_2SO_4, NaCl and Na_2SO_4, KCl. The order of chlorides as solvents corresponded to Semenchenko's theory (*C.A.* 42, 3240c) of real solns.

Eurilla Mayeda

KASHCHEYEV, G. N.

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions. B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29940

Author : Voskresenskaya N. K., Kashcheyev G. N.
Inst : Institute of General and Inorganic Chemistry, Academy of Sciences USSR
Title : Solubility of Metal Oxides in Fused Salts

Orig Pub: Izv. Sektora fiz.-khim. analiza IONKh AN SSSR, 1956, 27, 255-267

Abstract: By the previously described method (RZhKhim, 1955, 36865) a study has been made of the solubility (m) of MgO (I) (99% by weight), CaO (99.16%) (II), ZnO (100.0%) (III), Cr_2O_3 (100.0%) (IV), and of a mixture of CuO and Cu_2O (98% CuO) (V) in fused MCl and M_2SO_4 (M -- Li, Na, K) at four temperatures within the temperature interval of 700-1200°. It was found that with increase in temperature m increases (in the case of I no change could be detected) and depends to a greater extent upon the nature of the oxides than on the nature of

Card : 1/2

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-chemical analysis. Phase transitions. B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29940

the solvents. Magnitude of M (irrespective of temperature) increases in the series IV, I, III, V, II; dissolving power of the salts increases in the series K, Na, Li. With several exceptions in the case of I and III, m increases when the ratio of generalized moments of cathion of the oxide and solvent approaches unity. A correlation has been noted between m and energy of oxide lattice. The difference is pointed out, as concerns solvent properties for oxides, between MCl and M_2SO_4 on one hand, and cryolite, on the other.

Card : 2/2 -53-

KASHCHEYEV, G.N.; TSEFT, A.L.; CHIGRINEVA, A.I.

Extraction of manganese from ores of the Ikat-Garga deposit by means of a calcium chloride solution. Trudy Vost.-Sib.fil. AN SSSR no.25: 12-20 '60. (MIRA 13:9)
(Manganese) (Calcium chloride)

KASHCHEYEV, G.N.; TSEFT, A.L.; CHIGRINEVA, A.I.

Extraction of manganese from ores of the Ikat-Garga deposit by means of a sulfuric acid solution. Trudy Vost.-Sib.fil. AN SSSR no.25: 21-26 '60. (MIRA 13:9)
(Manganese) (Sulfuric acid)

IL'YUKHINA, A.V.; KASHCHEYEV, G.N.; LOMONOSOVA, T.K.

Some characteristics of the sedimentation and mineral content of Jurassic sediments in the northwestern part of the Irkutsk Basin. Trudy Inst.geol.i geofiz.Sib.otd.AN SSSR no.20:31-38 '6[illegible]. (MIRA 17:10)

KOSHARNYY, I.Ya. [Kosharnyi, I.IA.]; PIDPRIGORSHCHUK, M.V.; GAPSHENKO, I.I.; SKRIPNIK, K.I.; KASHCHEYEV, I.A., red.; KUTSENKO, V.P., red.; NIKOLAYENKO, V.S., red.; POTAYCHUK, I.M. [Potaichuk, I.M.], vidp. red.; SENDZYUK, F.L., red.; FOGT, V.Ya., tekhn. red.

[Soviet Drogobych Province] Radians'ka Drohobychchyna. Drohobych, Drohobyts'ke obl. vyd-vo, 1957. 199 p. (MIRA 11:8)
(Drogobych Province)

MAMYKIN, P.S.; ANTONOV, G.N.; KASHCHEYEV, I.D.

New method of determining the slag resistance of refractory materials. Ogneupory 30 no.1:37-42 '65. (MIRA 18:3)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova.

KASHCHEYEV, I., inzhener.

Standard diagrams for over-all mechanization of operations at stations of the Grain Procurement Agency. Muk.-elev.prom. 20 no.7:8-9 Jl '54. (MLRA 7:8)

1. Gosudarstvennyy institut Promzernoproyekt.
(Granaries)

KASHCHEYEV, I.

OVCHINNIKOV, P., inzhener; IL'IN, N., inzhener; KASHCHEYEV, I., inzhener.

Central control of operations and remote control of machinery in elevators. Muk.-elev.prom. 20 no.10:4-6 O '54. (MLRA 7:12)

1. Gosudarstvennyy institut Promzernoproyekt (for Kashcheyev, Ovchinnikov & Il'in)
(Grain handling) (Automatic control)

State Inst of Grain Industry Promzernoproyekt

KASHCHEYEV, I., inzhener; BOROKHOVSKIY, L.

Plants for processing seed corn. Muk.-elev.prom.22 no.11:5-8 N '56. (MLRA 10:1)

1. Promzernoproyekt.
(Corn (Maize)) (Grain elevators)

KASHCHEYEV, I., inzhener.

Automatic feed plants in the U.S.A. Muk.-elev.prom. 23 no.5:31-3 of cover My '57. (MLRA 10:9)

(Feed mills)

KASECHEYEV, I., inzh.

Grain elevator in Chicago. Muk.-elev.prom.24 no.2:30-32 F '58.
(MIRA 11:4)

(Chicago--Grain elevators)

NOVOSELOV, G. P.; KASHCHEYEV, I. N.; DOGAYEV, Yu. D.; AGEYENKOV, A. T.

"Interaction of Uranium with Alkaline Metal Fluorides and Recovery of Plutonium and Some Fission Elements by Them."

report submitted for ~~2nd~~ 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

KASHCHEYEV, I.P., inzh.

Automatic grain elevator. Mekh.i avtom.proizv. 14 no.2:44-47 F '60. (MIRA 13:5)

(Grain elevators)
(Automatic control)

KASHCHEYEV, I., inzh.

Unloading truck trailers at the Petropavlovsk Grain Elevator. Muk.-elev. prom. 27 no.7:15 Jl '61. (MIRA 14:7)

1. GI Promzernoproyekt.
(Petropavlovsk—Grain elevators)
(Loading and unloading)

DZHOROGYAN, G., kand.tekhn.nauk; KASHCHEYEV, I., inzh.

Drying pulse crop seeds in the German Democratic Republic.
Muk.-elev.prom. 28 no.9:29-31 S '62. (MIRA 15:10)
(Germany, East—Seeds—Drying) (Legumes)

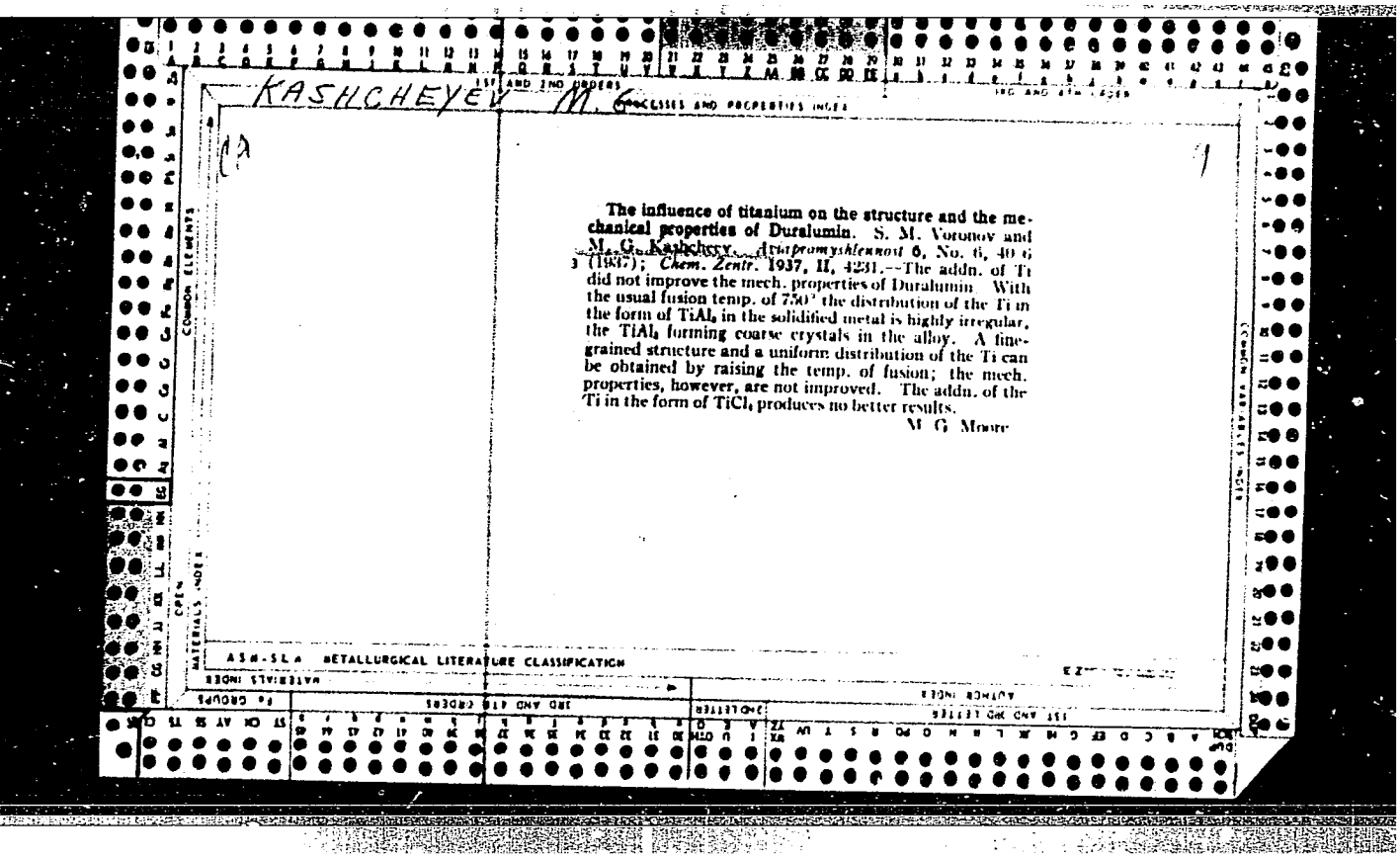
BENDERSKIY, S.N., kand.tekhn. nauk; BURSIAN, V.R., prof., kand. tekhn. nauk; VASIL'YEV, P.N., inzh.; DORFMAN, E.Ye., inzh.; ZHURAVLEV, V.F., kand. tekhn. nauk; KESTEL'MAN, V.N., inzh.; KRUGLOV, A.N., dots., kand. tekhn. nauk; KUKIBNYY, A.A., dots., kand.tekhn. nauk; LEVACHEV, N.A., dots., kand. tekhn. nauk; LEYKIN, A.Ya., inzh.; NAREMSKIY, N.K., dots., kand. tekhn. nauk; PLATONOV, P.N., prof., doktor tekhn. nauk; SOKOLOV, A.Ya., prof., doktor tekhn. nauk; KUTSENKO, K.I., kand. tekhn. nauk, dots., retsenzent; VEREMEYENKO, Ye.I., inzh., retsenzent; KOVTUN, A.P., inzh., retsenzent; SEMENYUK, A.I., retsenzent; KASHCHEYEV, I.P., inzh., retsenzent; PAL'TSEV, V.S., kand. tekhn. nauk, retsenzent; KHMEL'NITSKAYA, A.Z., red.

[Conveying and reloading machinery for the overall mechanization of the food industries] Transportiruiushchie i peregruzochnye mashiny dlia kompleksnoi mekhanizatsii pishchevykh proizvodstv. Moskva, Pishchevaia promyshlennost', 1964. 759 p. (MIRA 18:3)

(Continued on next card)

BENDERSKIY, S.N.—— (continued). Card 2.

1. Odesskiy tekhnologicheskiy institut imeni M.V.Lomonosova (for Kutsenko, Naremskiy, Veremeyenko, Kovtun). 2. Starshiy ekspert Upravleniya po avtomatizatsii i oborudovaniyu dlya pishchevoy promyshlennosti Gosudarstvennogo komiteta po mashinostroyeniyu pri Gosplane SSSR (for Semenyuk). 3. Glavnyy mekhanik Gosudarstvennogo instituta po proyektirovaniyu predpriyatiy mukomol'nokrupyanoy i kombikormovoy promyshlennosti i elevatorno-skladskogo khozyaystva (for Kashcheyev). 4. Zaveduyushchiy laboratoriyey Vsesoyuznogo nauchno-issledovatel'skogo instituta zerna i produktov ego pererabotki (for Pal'tsev).



KASHCHEYEV M. G.

The influence of titanium on the structure and the mechanical properties of Duralumin. S. M. Voronov and M. G. Kashcheyev. *Aviaprom. vyshlennost* 6, No. 6, 40 (1937); *Chem. Zentr.* 1937, II, 4231.—The addn. of Ti did not improve the mech. properties of Duralumin. With the usual fusion temp. of 750° the distribution of the Ti in the form of $TiAl_3$ in the solidified metal is highly irregular, the $TiAl_3$ forming coarse crystals in the alloy. A fine-grained structure and a uniform distribution of the Ti can be obtained by raising the temp. of fusion; the mech. properties, however, are not improved. The addn. of the Ti in the form of $TiCl_4$ produces no better results.

M. G. Moore

KASHCHEYEV, M.G.

137-58-2-2902

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 2, p 99 (USSR)

AUTHORS: Fridlyander, I.N., Zakharov, V.Z., Kashcheyev, M.G.

TITLE: A Study of Oxide Scab in Aluminum-alloy Forgings (Izucheniye okisnykh plen v shtampovkakh iz alyuminiyevykh splavov)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 298-305

ABSTRACT: A study was made of the causes of oxide-scab formation in aluminum-alloy forgings and of the relationship to scab formation of such factors as, a) the duration of the pouring operation, b) standing time in the holding furnace (mixer), c) forced mixing, d) the composition of the charge, e) filtration of the metal, and f) deformations. Data are given on oxide-scab distribution in individual forgings. It was demonstrated that the oxide scab is a result of a reaction of oxide casting scab with the metal in the process of being deformed. Some of it was related to the purity of the molten metal in the smelting furnace and to the rate at which scabs detached themselves from the stream surface while the metal was being poured. Filtration of the molten metal did not yield satisfactory results. The more oxide scabs there were

Card 1/2

137-58-2-2902

A Study of Oxide Scab in Aluminum-alloy Forgings

in the ingots and the greater was the degree of deformation, the greater were the size and number of scabs encountered in press-forgings and drop-forgings.
P.V.

1. Aluminum alloy forgings---Impurities

Card 2/2

MOCHUL'SKIY, Savva Kornovich; KASHCHEYEV, Mikhail Vasil'yevich; KUKLIN, P.V., red.; IZHBOLDINA, S.I., tekhn.red.

[Growing field crop seeds and producing certified planting material in Stalingrad Province] Sistema semenovodstva i proizvodstvo sortovykh semian polevykh kul'tur v Stalingradskoi oblasti. Stalingrad, Stalingradskoe knizhnoe izd-vo, 1960. 70 p. (MIRA 14:3)
(Stalingrad Province--Seed production)

KASHCHEYEV, N., inzhener.

A.M.Savinov's draw-out device used for fire trucks, stuck in the mud. Pozh.delo 3 no.1:18 Ja '57. (MIRA 10:4)
(Fire engines)

KASHCHEYEV, N.)

KASHCHEYEV, N., inzh.

Fire equipment during forty years. Pozh.delo 3 no.11:19-22 N '57.
(MIRA 10:11)
(Fire engines)

SHEVELEV, A.S.; KASHCHEYEV, N.A.

Summing spatial deviations of surfaces caused by machining parts. Izv. vys. ucheb. zav.; av. tekh. no.2:162-165 '58. (MIRA 11:6)

1. Kuybyshevskiy aviatsionnyy institut, Kafedra proizvodstva avidvigateley.

(Metal cutting)

LEVITOV, M.M.; GOTOVTSEVA, V.A.; INOZEMTSEVA, I.I.; BYCHKOVA, M.M.; LUR'YE, L.M.; KASHCHEYEV, N.A.; NEMASHEVA, A.M.

Production of radioactive penicillin (S^{35}). Antibiotiki 1 no.4:20-24 Jl-Ag '56. (MLRA 9:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(PENICILLIN, radioactive prod.)

ISACHENKO, L.I.; KASHCHEYEV, N.E., inzh., rukovoditel' diplomnogo proyekta

Insulating oxygen AIF-1 gas mask. Pozh. bezop. no.3:95-98 '64.
(MIRA 18:5)